

Claims

What is claimed is:

5 1) An internal combustion engine having at least one
reciprocating component, a bore within which the at least one reciprocating component
reciprocates, and a closure over one end of the bore associated with the at least one
reciprocating component, said reciprocating component having at least one combustion face,
said combustion face defining a combustion face area, said reciprocating component further
10 reciprocating relative to the closure and having a position at which the combustion face is at
a closest point to the closure, wherein a combustion volume within which an air/fuel mixture
is combusted is defined at least in part by the combustion face of the reciprocating
component, and a surface of the closure, wherein at least a portion of the surfaces which
define the combustion volume are coated with a substantially homogenous metallic coating
15 comprising between greater than 15% and about 80% nickel such that when the combustion
face is at the position at which the combustion face is at a closest point to the closure, the
coating covers an area of the combustion surfaces at least as large as approximately 10% of
the area of the combustion face, and further wherein said coating is exposed to combustion
gases.

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 2) An internal combustion engine having at least one
reciprocating component, a bore within which the at least one reciprocating component

reciprocates, and a closure over one end of the bore associated with the at least one reciprocating component, said reciprocating component having at least one combustion face, said combustion face defining a combustion face area, said reciprocating component further reciprocating relative to the closure and having a position at which the combustion face is at a closest point to the closure, wherein a combustion volume within which an air/fuel mixture is combusted is defined at least in part by the combustion face of the reciprocating component, and a surface of the closure, wherein at least a portion of the surfaces which define the combustion volume are coated with a substantially homogenous metallic coating comprising between about 10% and about 40% chromium such that when the combustion face is at the position at which the combustion face is at a closest point to the closure, the coating covers an area of the combustion surfaces at least as large as approximately 10% of the area of the combustion face, and further wherein said coating is exposed to combustion gases.

3) A method for fabricating a reduced emissions diesel engine component, wherein said component forms a combustion surface for a diesel engine and wherein a portion of said component which forms a combustion surface has inadequate material to meet design geometry, comprising the steps of coating at least the portion of said component which forms a combustion surface with a substantially homogenous coating having at least sufficient thickness to allow said surface to meet design geometry, wherein said coating comprises nickel, chromium, and iron; and

machining a portion of the coating from the surface to restore desired tolerances.